# SONY
# TRINITRON® COLOR TV
# KV-21FX1MT/RM-646

*ME Model*

*Chassis No. SCC-793A-A*

# VX CHASSIS

**WARNING !!**

**AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.**
**THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.**

**SAFETY-RELATED COMPONENT WARNING !!**

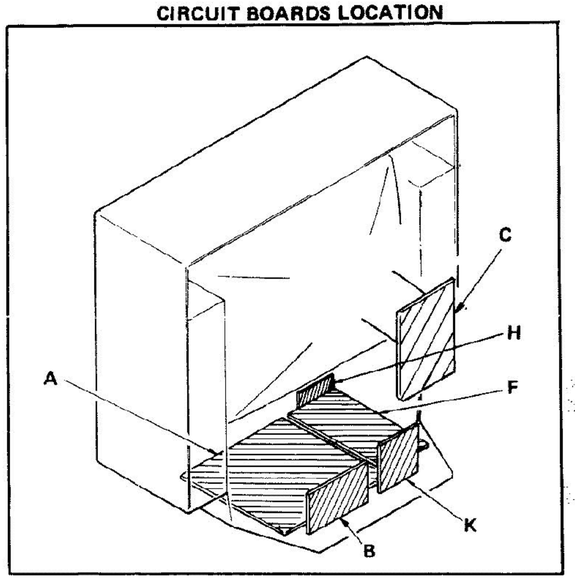
**COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.**

**Note:**

- All capacitors are in μF unless otherwise noted. 50WV or less are not indicated except for electrolytics. p : μμF
- All resistors are in ohms. 1/6W unless otherwise noted. kΩ : 1000Ω, MΩ : 1000 kΩ
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : nonflammable resistor.
- △ : internal component.
- : panel designation.
- : adjustment for repair.
- : B+ bus.
- : B− bus.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a 10 MΩ digital multimeter.
- Voltage variations may be noted due to normal production tolerances.
- Readings are taken with a color-bar-signal input.
- no mark: with PAL color-bar signal received.
  ( ) : with SECAM color-bar signal received.
  < > : with NTSC (4.43) color-bar signal received.
  [ ] : with NTSC (3.58) color-bar signal received.
- : signal path.
- : NTSC
- : PAL
- : SECAM

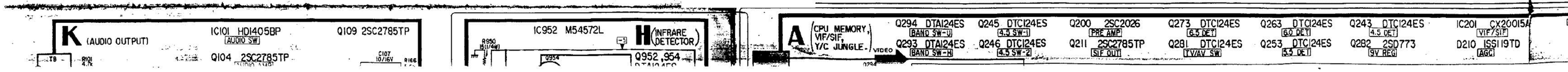
**Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.**

**CIRCUIT BOARDS LOCATION**

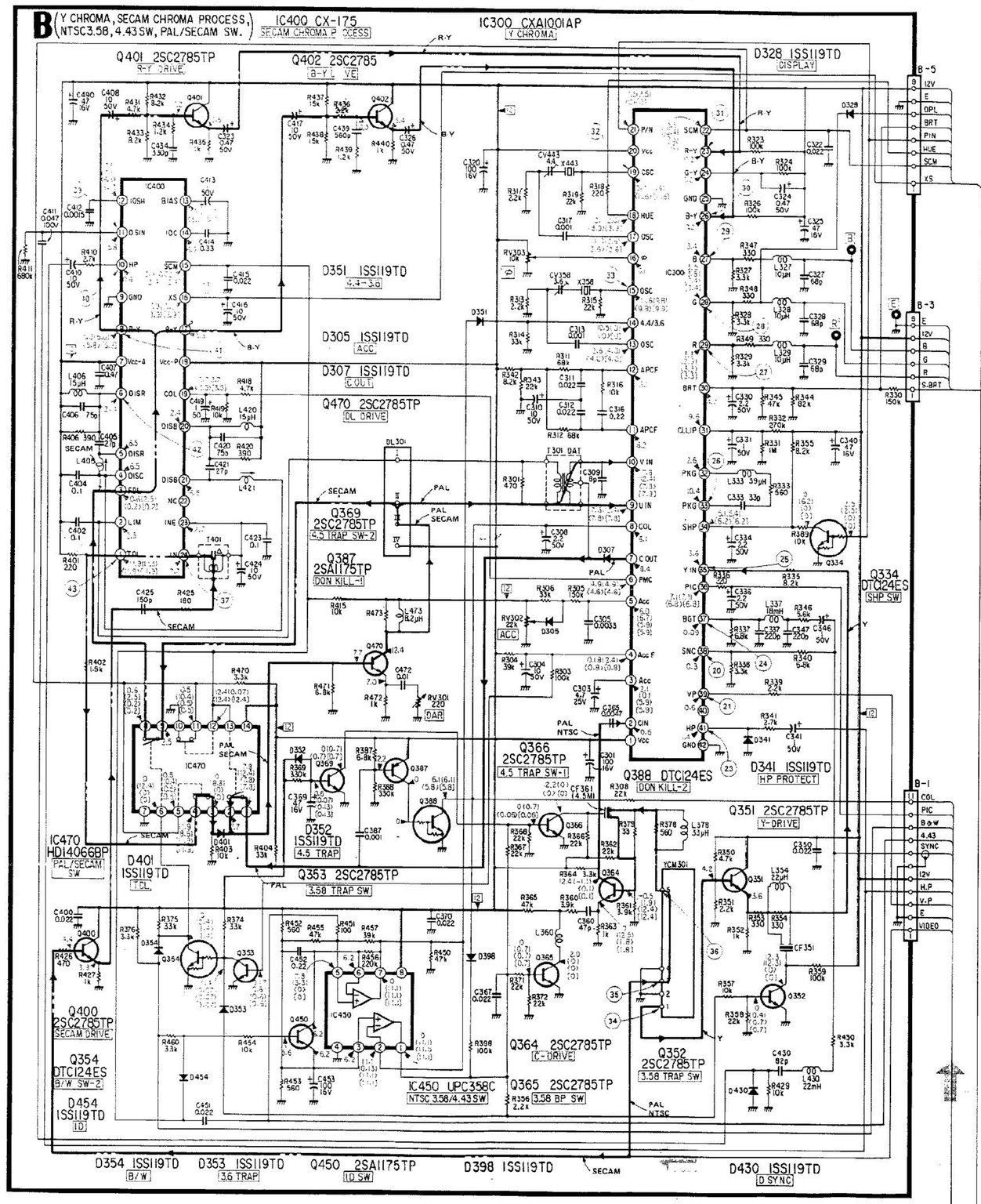



| | | | | | |
|---|---|---|---|---|---|
| ① 15Vp-p(H) | ⑨ SECAM 2Vp-p(H) | ⑯ SECAM 0.8Vp-p(H) | ㉓ 2.6Vp-p(H) | ㉗ NTSC 4.43, 3.58 0.8Vp-p(H) | ㉛ SECAM 1V |
| ② SECAM 2.4Vp-p(H)<br>NTSC 4.43, 3.58 4.4Vp-p(H) | ⑨ PAL 2Vp-p(H)<br>NTSC 4.43, 3.58 2.8Vp-p(H) | ⑰ NTSC 4.43, 3.58 1.6Vp-p(H) | ㉔ SECAM 6.3Vp-p(H)<br>PAL 6.4Vp-p(H)<br>NTSC 4.43, 3.58 6.3Vp-p(H) | ㉘ SECAM 4.4Vp-p(H) | ㉜ PAL 1.2Vp-p( |
| ③ SECAM 4Vp-p(H)<br>NTSC 4.43, 3.58 4Vp-p(H) | ⑩ 0.3Vp-p(H) | ⑱ 5.2Vp-p(V) | ㉕ SECAM 1Vp-p(H) | ㉘ PAL 4.8Vp-p(H) | ㉝ 1.1Vp-p(3. |
| ④ 12Vp-p(V) | ⑪ 3Vp-p(H) | ⑲ 90Vp-p(V) | ㉕ PAL 1.2Vp-p(H)<br>NTSC 4.43, 3.58 1.6Vp-p(H) | ㉘ NTSC 4.43, 3.58 6Vp-p(H) | ㉞ SECAM 1Vp |
| ⑤ 3.5Vp-p(V) | ⑫ 4.2Vp-p(4MHz) | ⑳ SECAM 4Vp-p(H)<br>PAL 4Vp-p(H) | ㉖ SECAM 1.1Vp-p(H) | ㉙ SECAM 5Vp-p(H) | ㉞ PAL 1Vp-<br>NTSC 4.43, 3.58 |
| ⑥ 10Vp-p(V) | ⑬ 1240Vp-p(H) | ⑳ NTSC 4.43, 3.58 1.6Vp-p(H) | ㉖ PAL 1.3Vp-p(H)<br>NTSC 4.43, 3.58 1.6Vp-p(H) | ㉙ PAL 5Vp-p(H) | ㉟ SECAM 1.1V |
| ⑦ SECAM 16Vp-p(H)<br>NTSC 4.43, 3.58 13Vp-p(H) | ⑭ 92Vp-p(H) | ㉑ 8Vp-p(V) | ㉗ SECAM 4.4Vp-p(H) | ㉘ NTSC 4.43, 3.58 4.6Vp-p(H) | ㉟ PAL 2.1Vp |
| ⑧ 12.5Vp-p(V) | ⑮ 23Vp-p(H) | ㉒ PAL 4Vp-p(H) | ㉗ PAL 5Vp-p(H) | ㉚ SECAM 0.6Vp-p(H) | ㉟ NTSC 4.43, 3.58 |

## SCHEMATIC DIAGRAM



| | | |
|---|---|---|
| (31) SECAM 1Vp-p(H) | (36) SECAM 0.6Vp-p(H) | (43) 0.3Vp-p(H) |
| (32) PAL 1.2Vp-p(3.58MHz) | (35) PAL 0.7Vp-p(H) NTSC 4.43, 3.58 0.7Vp-p(H) | (44) 27Vp-p(H) |
| (33) 1.1Vp-p(3.58MHz) | (37) 0.6Vp-p(H) | (45) SECAM 115Vp-p(H) |
| (34) SECAM 1Vp-p(H) | (38) SECAM 2Vp-p(H) | (45) PAL 130Vp-p(H) NTSC 4.43, 3.58 130Vp-p(H) |
| (34) PAL 1Vp-p(H) NTSC 4.43, 3.58 1Vp-p(H) | (39) SECAM 2.4Vp-p(H) | (46) SECAM 120Vp-p(H) |
| (35) SECAM 1.1Vp-p(H) | (40) SECAM 1.6Vp-p(H) NTSC 4.43, 3.58 1.5Vp-p(H) | (46) PAL 150Vp-p(H) NTSC 4.43, 3.58 150Vp-p(H) |
| (35) PAL 2.1Vp-p(H) | (41) 2Vp-p(H) | (47) SECAM 115Vp-p(H) |
| (38) NTSC 4.43, 3.58 1.5Vp-p(H) | (42) 0.5Vp-p(H) | (47) PAL 150Vp-p(H) NTSC 4.43, 3.58 150Vp-p(H) |



# SCHEMATIC DIAGRAM

**K** (AUDIO OUTPUT)

IC101 HDI405BP — AUDIO SW.

Q109 2SC2785TP

Q104 2SC2785TP — AUDIO AMP.

Q102,103 2SC2785TP — VIDEO BUFFER

Q105-108 2SA1175TP — VIDEO AMP

Q100,101 2SC2785TP — VIDEO BUFFER

D105-108 MC931TP — CLAMP

D100-104 ISS119TD — SW

**H** (INFRARE DETECTOR)

IC952 M54572L

Q952,954 DTAI24ES

D953,954 ISS119TD

D952 RD2.7ESH-B1

D969 ISS119TD

D960 RD7.5ES-T1B1

Q956,957 Q960,961 DTAI24ES

IC951 BX-1387 — INFRARE DETECTOR

D951 SR632D

D961 RD7.5ES-T1B1

IC953 M54572L

**A** (CPU MEMORY, VIF/SIF, Y/C JUNGLE.)

Q294 DTAI24ES — BAND SW-U

Q293 DTAI24ES — BAND SW-H

Q245 DTCI24ES — 4.5 SW-1

Q246 DTCI24ES — 4.5 SW-2

Q200 2SC2026 — PRE AMP

Q211 2SC2785TP — SIF OUT

Q273 DTCI24ES — 6.5 DET

Q281 DTCI24ES — TV/AV SW

Q263 DTCI24ES — 6.0 DET

Q253 DTCI24ES — 6.5 DET

Q243 DTCI24ES — 4.5 DET

Q282 2SD773 — 9V REG

IC201 CX20015A — VIF/SIF

D210 ISS119TD — AGC

TU291 BT-887A

Q292 DTAI24ES — BAND SW-1

Q291 2SC2785TP-H — VC FILTER

Q241 2SC2785TP — SYSTEM SW

D206 ISS119TD — SYSTEM SW

D205 ISS119TD — CC SW

IC202 HDI4052BP — SYSTEM SW

D281 RD10ES-B3 — 9V REG

D241 RD4.7ES-1B2 — 4.5 LIMITTER

D251 RD4.7ES-T1B1 — 6.5 LIMITTER

Q244 2SC2458TP — 4.5 PEAKING-3

Q242 2SC2458TP — 4.5 PEAKING-2

Q254 2SC2785TP — 5.5 PEAKING-3

Q252 2SC2785TP — 5.5 PEAKING-2

Q251 2SC2785TP — 5.5 PEAKING-1

Q264 2SC2785TP — 6.0 PEAKING-3

Q262 2SC2785TP — 6.0 PEAKING-2

Q261 2SC2785TP — 6.0 PEAKING-1

Q274 2SC2785TP — 6.5 PEAKING-3

Q272 2SC2785TP — 6.5 PEAKING-2

Q271 2SC2785TP — 6.5 PEAKING-1

Q586 DTCI44ES

Q582 DTCI44ES — PIN SW.

Q585 DTCI44ES — PIN PHASE

Q581 DTCI44ES — V PULSE

IC581 CX23025 — SYSTEM SW.

Q583 2SC2785TP

Q584 DTCI44ES — H/V CENT.

D581 ISS119TD

D502 ISS119TD — V SYNC

D503 ISS119TD — V OSC

IC50 UPC1377C — V OSC

Q504 2SC2785TP — V OUT

Q501 2SC2785TP

Q502 2SA1175TP

Q804 2SC2785TP — PULSE

D611 RD110EBTN — REG-1

D612 S1B01-04V1 — STOPPER

D613,614 ERB44-06 — REF RECT-1,2

D651 RU-3AM — +B RECT

D652 RGP10GPKG23 — 7V RECT

D615 RD6.8ES-T1B2 — REG-2

D658 ISS119TD

D657 RD5.6ES-T1B1

D659 RGP10GPKG23 — 15V RECT

D601 S3WB60Z — AC RECT

Q611 2SC2688 — SURGE

Q612 2SC2688 — SURGE

Q614 2SC2688 — REF PEAK

D616 S1B01-04V1 — REF PEAK

Q613 2SC3460 — REG

Q617 2SC2785TP — REG

Q615 2SC2785TP — REG

D619 RGP10GPKG23 — REF PEAK

D617 ISS119TD — REF PEAK

D622 RD16ES-T1B3 — REF PEAK

D653 ERC35-02 — 28V RECT

IC602 PC111 — ISOLATION

D654 ISS119TD

D655 RD12ES-T1B2

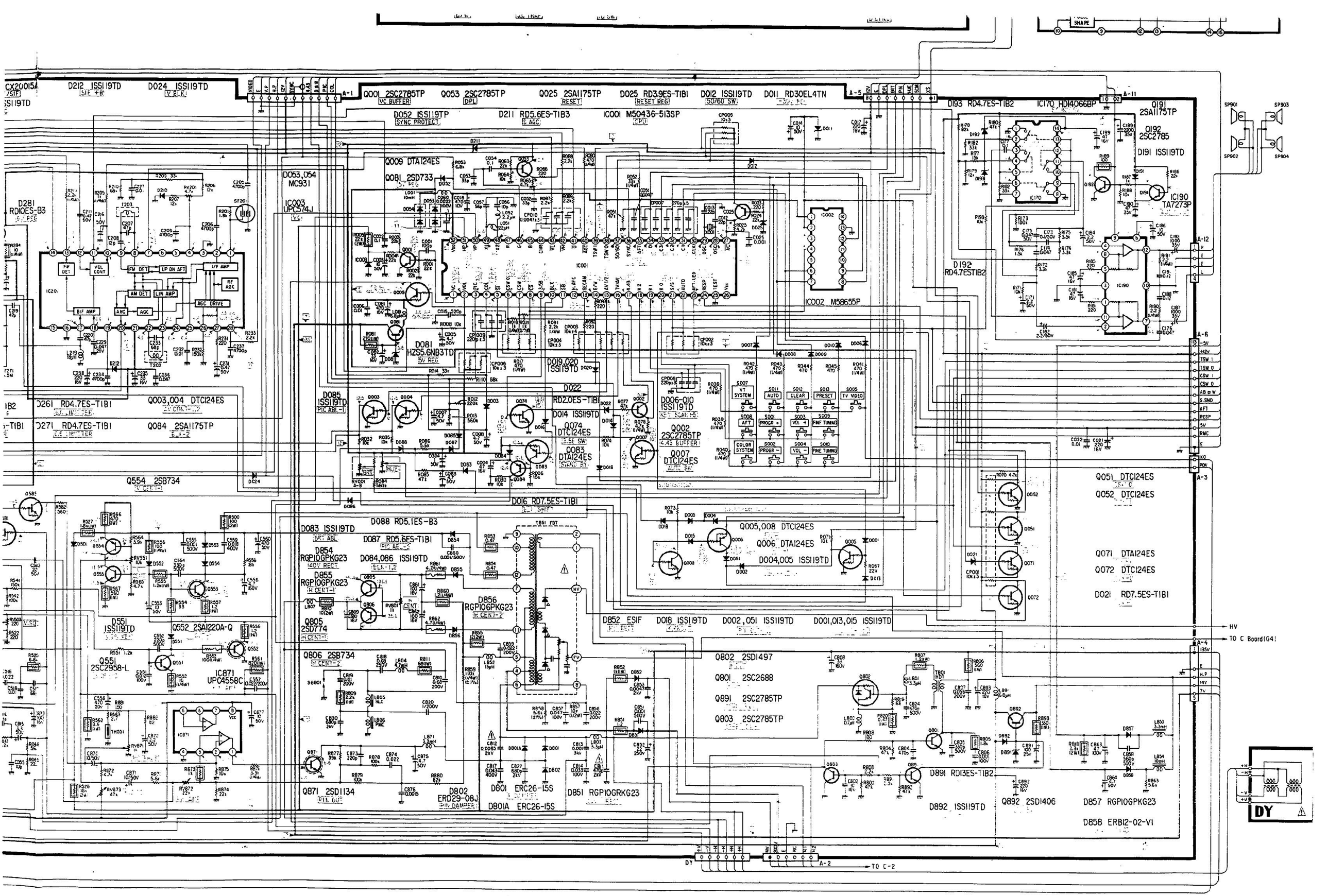
IC651 IR9431 — SW

IC601 UPC1394C — REG

D618 ISS119TD — REG

**F** (REG OUT)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|


CX20015A
D212 ISS119TD
D024 ISS119TD
Q001 2SC2785TP
VC BUFFER
Q053 2SC2785TP
Q025 2SA1175TP
RESET
D025 RD3.9ES-T1B1
RESET REG
D012 ISS119TD
50/60 SW
D011 RD30EL4TN
D052 ISS119TP
SYNC PROTECT
D211 RD5.6ES-T1B3
IC001 M50436-513SP
CPU
D193 RD4.7ES-T1B2
IC170 HDI4066BP
Q191 2SA1175TP
Q192 2SC2785
D191 ISS119TD
IC190 TA7273P
SP901
SP903
SP902
SP904
D281 RD10ES-B3
IC201
FM DET
VOL CONT
FM DET
UP DN AFT
I/F AMP
RF AGC
AM DET
LIN AMP
AGC DRIVE
IF AMP
ANC
AGC
D053,054 MC931
IC003 UPC574J
Q009 DTA124ES
Q081 2SD733
5V REG
D081 HZS5.6NB3TD
5V REG
D085 ISS119TD
PIC ABL-1
D019,020 ISS119TD
D022 RD2.0ES-T1B1
D014 ISS119TD
Q074 DTC124ES
B.SE SW
Q083 DTA124ES
STAND BY
Q003,004 DTC124ES
Q002 2SC2785TP
14.43 BUFFER
Q007 DTC124ES
AUTO SW
D006-010 ISS119TD
KEY SCAN-1-5
IC002 M58655P
D261 RD4.7ES-T1B1
D271 RD4.7ES-T1B1
Q084 2SA1175TP
Q554 2SB734
V BLK-1
D016 RD7.5ES-T1B1
D088 RD5.1ES-B3
D083 ISS119TD
D087 RD5.6ES-T1B1
D084,086 ISS119TD
D854 RGP10GPKG23
D855 RGP10GPKG23
D856 RGP10GPKG23
Q805 2SD774
Q806 2SB734
Q871 2SD1134
PIX OUT
D802 ERD29-08J
D801 ERC26-15S
D801A ERC26-15S
D851 RGP10GRKG23
Q005,008 DTC124ES
Q006 DTA124ES
D004,005 ISS119TD
Q051 DTC124ES
Q052 DTC124ES
Q071 DTA124ES
Q072 DTC124ES
D021 RD7.5ES-T1B1
D852 ESIF
D018 ISS119TD
D002,051 ISS119TD
D001,013,015 ISS119TD
Q802 2SD1497
Q801 2SC2688
Q891 2SC2785TP
Q803 2SC2785TP
D891 RD13ES-T1B2
D892 ISS119TD
Q892 2SD1406
D857 RGP10GPKG23
D858 ERB12-02-V1
D551 ISS119TD
Q552 2SA1220A-Q
Q551 2SC2958-L
IC871 UPC4558C
Q551 2SC2958-L
TO TUNER
TO SW
TO CRT SHAPE
HV
TO C Board(G4)
TO C-2
DY

# TRACE

A new TV Repair Assistance Tool that combines ease of use and powerful PC software tools to allow you to save valuable time during many TV repairs.

The TRACE interface connects to the PC's serial port. It provides connection to the TV's $I^2C$ bus and can be provided with an InfraRed transmitter (optional).

The interface is powered by a standard 9 V PP3 battery for portable use, and can also be powered by an external 9V/25mA DC power supply.

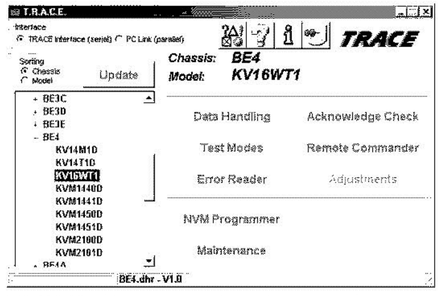
The TRACE software that is supplied with the interface allows you to:

- Read, restore and compare NVM contents via the $I^2C$ bus
- Acknowledge check of all $I^2C$ devices in the TV set
- Read Error Codes (emulation of the Error Reader tool)

With the optional IR Add-on kit, the following features can be added:

- Remote Commander emulation
- User programmable Functional Check through Infrared
- Fast and documented Test Mode setting of all Sony TV chassis

Additional features such as Adjustments and Troubleshooting are available in chassis-dependent software modules. Please contact your local Sony Service organisation for the latest information.




*Note: For workshops already using the existing $I^2C$ Link parallel port interface (9-948-320-30), this software can be used as well, replacing the TV Data Handling software (9-948-340-50), but Error Reader and IR functions can only be accessed with the TRACE interface.*

Partnumbers: TRACE Starter Kit (TRACE interface + software): 9-948-320-70
TRACE Software (for users of the $I^2C$ Link interface): 9-948-340-80
TRACE IR Add-on (IR interface + Remote Commander software): 9-948-320-80

PC requirements: IBM-compatible PC with operating system Windows95, Windows98, or WindowsNT*.

* WindowsNT only supported with TRACE interface


**Sony Corporation**
**Sony UK**
**Service Promotions Dept.**

**English**
00HP7163-1
Printed in U.K.

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**9-974-997-01**

## VCD EPROM IC AVAILABLE HERE (27C020)

| CODE | DISPLAY | MODELS |
|---|---|---|
| 5639 | LCD | VCD-268 VCD-2000 VCD-5000 |
| 02B7 | LCD | DVD-757 VCD-M34 FUJIYA VCD-988A ELITE VCD-989E |
| 0AAC | LCD V1.1 | VCD-M34 FUJIYA VCD-688 |
| 0FD7 | LCD | VCD-5000 |
| 136C | LCD | VCD-757 VCD-5000 |
| 176B | | |
| 198F | LCD | ELITE VCD-989B |
| 1B5F | LCD | VCD-2000 |
| 1DF4 | | |
| 308E | LCD | VCD-988A |
| 3DB8 | LCD | VCD-268 AV-767K VCD-5000 |
| 3E70 | | |
| 4AF2 | | VCD-988M |
| 555D | GRAPHICS | DAEWOO VCD-3DX88 |
| 55F8 | GRAPHICS | |
| 67F5 | LCD W/KALAOK | VCD-222 VCD-323 MARUBISHI VCD-2000 |
| 6CC0 | GRAPHICS | VCD-888 SAIYO |
| 7069 | LCD | VCD-2099B WANKE |
| 908F | GRAPHICS | MVD 8.0-2000 |
| 923B | LCD | VCD-999 VCD-F20 VCD-2000 MP3 |
| 937B | LCD | VCD-699 |
| 9394 | LCD | |
| 952E | | MARUBISHI |
| 999E | LCD W/GRAPHICS | 2002 ORANG |
| 99E8 | | |
| 9C0E | | |
| A25D | LCD | VCD-2099B SONY |
| A494 | | |
| A512 | GRAPHICS | VCD-2998C |
| A918 | | |
| A988 | GRAPHICS | VCD-2000 AV-50W |
| AC13 | GRAPHICS | |
| AF66 | | |
| B059 | GRAPHICS | |
| B781 | | VCD-M28II |
| BCE3 | | VCD-M56 FUJIYA VCD-323 MARUBISHI |
| C1DF | LCD | VCDMP3-288 VCD-5000 VCD-2000-MP3 AMP 3.8 |
| C37A | GRAPHICS | MP3-VCD-2000 MVD 8.0 |
| D3AB | LCD | VCD-158 AV-50W MP3-VCD-2000 3.8 |
| D3BC | LCD | AKAI VCD-5000 VCD-2000-MP3 AMP 3.8 |
| EAC5 | | |
| EF43 | GRAPHICS | VCD-999 |
| 47A0 | LCD | SAMWON W/ GAME PLAY |
| 383E | | |
| 8FF4 | LCD | MP3 VCD-5000 |

NOTE: Some units may not function properly, in this case a working ic from other same model is needed to act as a master copy to transfer the codes from.

## TV EPROM IC PROGRAMMING FOR THE FOLLOWING:

24CXX SERIES 59CXX SERIES 93CXX SERIES
24C01 24C02 24C04... 59C11... 93C46...
BRING A WORKING COPY FROM A SIMILAR UNIT TO TRANSFER FROM.

## OTHERS:

7CXXX 12CXXX 16CXXX 24LXXX 24SXXX 27XX 27CXXXX 28CXXX 28FXXX 28HCXXX 28LXXX
28SXXX 35CXX 48CXXX 57XXXX 58CXXX 63SXXX 74SXXX 81XXX 81CXXX 82XX 82CXXX 82SXXX
87CXXX 87SXXX 89CXXX 98XX 98CXXX

## IC TESTING FOR THE FOLLOWING:

TTL 74XXX, 74LSXXX SERIES CMOS 40XX & 45XX SERIES
DRIVER 75XXX SERIES OPTO PCXXX SERIES

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